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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,254	02/26/2002	Scott R. Gremmert	H0002864	1711

128 7590 05/03/2006

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EXAMINER	
DO, CHAT C	

ART UNIT	PAPER NUMBER
2193	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,254	GREMMERT, SCOTT R.	
	Examiner	Art Unit	
	Chat C. Do	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2006 and 17 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36 and 49-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9,33,35 and 53-55* is/are allowed.

6)☒ Claim(s) *1-8,10-32,34,36,49-52 and 56-59* is/are rejected.

7)☒ Claim(s) *60* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to Amendment filed 03/03/2006.

2. Claims 1-36 and 49-60 are pending in this application. Claims 1, 9, 11, 14, 21, 28, 33, 36, and 54 are independent claims. In Amendment, claims 37-48 are cancelled and claim 60 is added. This Office Action is made final.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 6, 10-25, 28, 34, 36, 49-52, and 56-59 are rejected under 35 U.S.C. 102(b) as being anticipated by Bae et al. (U.S. 5,968,111).

Re claim 1, Bae et al. disclose in Figures 2B and 3 a method for filtering data (e.g. abstract with median technique) the method comprising: receiving a plurality of data samples (e.g. R[0]-R[8] in Figure 2B); computing a locus of the samples (e.g. col. 3 lines 2-10); initially normalizing (e.g. col. 3 lines 21-33) a value of an input sample to a range centered on the locus; after normalizing the value of the input sample, passing the data through a distance-based filter (e.g. 31); and normalizing (e.g. col. 4 lines 12-17) an output value of the distance-based filter to a predetermined output range (e.g. Figures 2B

& 3 and col. 2 lines 40-59 wherein the value of final output of the circular filter must be within the unit circle in angles {0,+/-pi/2} or in magnitudes {+/-1}).

Re claim 2, Bae et al. further disclose in Figures 2B and 3 the distance-based filter further comprises a median (abstract lines 1-2).

Re claim 3, Bae et al. further disclose in Figures 2B and 3 the distance-based filter further comprises a low-pass (Figure 2B relates to a filter within a unit circle in phase and a magnatude; col. 4 lines 25-29).

Re claim 6, Bae et al. further disclose in Figures 2B and 3 computing a locus of the samples comprises computing one of an arithmetic mean (e.g. equation 1 in col. 3), a geometric mean, a harmonic mean, and a quadratic mean of the samples.

Re claim 10, Bae et al. further disclose in Figures 2B and 3 computing a locus of the samples comprises selecting a previous filter output value (e.g. Table 4).

Re claim 11, Bae et al. disclose in Figures 2B and 3 a method for filtering data (abstract), the method comprising: determining (col. 3 lines 2-9) a current locus of a plurality of data samples as a function of signal history; determining (col. 3 lines 22-32) a current normalizing range as a function of the current locus; normalizing (col. 3 lines 22-32) an input value to the current normalizing range; after normalizing the input value to the current normalizing range, passing (31 in Figure 3) the input value and the current locus through a distance-based filter; normalize (col. 4 lines 12-17) an output value of the distance-based filter to the current normalizing range (e.g. Figures 2B & 3 and col. 2 lines 40-59 wherein the value of final output of the circular filter must be within the unit circle

in angles {0,+/-pi/2} or in magnitudes {+/-1}, and in addition the storage is circular buffer).

Re claim 12, it has same limitations cited in claims 2, 3, or 4. Thus, claim 12 is also rejected under the same rationale as cited in the rejection of rejected claims 2, 3, or 4.

Re claim 13, it has same limitations cited in claim 6. Thus, claim 13 is also rejected under the same rationale as cited in the rejection of rejected claim 6.

Re claim 14, it is a device claim of claim 1. Thus, claim 14 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 15, Bae et al. further disclose in Figures 2B and 3 a means for comparing the distance between the input value and the locus with a predetermined threshold value (e.g. equation 2 with Max and Min).

Re claim 16, Bae et al. further disclose in Figures 2B and 3 a means for normalizing the distance between the input value and the locus when the distance exceeds a predetermined limit (e.g. equation 2 with Max and Min).

Re claim 17, Bae et al. further disclose in Figures 2B and 3 normalizing the distance between the input value and the locus includes adjusting the sample to be within one-half circle of the locus (e.g. equation 2 with Max and Min and lines 28 in col. 3).

Re claim 18, Bae et al. further disclose in Figures 2B and 3 a means for comparing the output value with a predetermined threshold value (e.g. equation 2 with Max and Min).

Re claim 19, Bae et al. further disclose in Figures 2B and 3 a means for normalizing the output value when the output value exceeds a predetermined limit (e.g. applying equation 2 with Max and Min).

Re claim 20, Bae et al. further disclose in Figures 2B and 3 normalizing the output value includes adjusting the output value to be within a predetermined output range (e.g. equation 2 within a unit circle).

Re claim 21, it is a system claim of claim 11. Thus, claim 21 is also rejected under the same rationale as cited in the rejection of rejected claim 11.

Re claim 22, Bae et al. further disclose in Figures 2B and 3 the function of determining an output value includes applying a distance-based tilter to the plurality of data samples (Figure 3).

Re claim 23, it has same limitations cited in claim 16. Thus, claim 23 is also rejected under the same rationale as cited in the rejection of rejected claim 16.

Re clam 24, it has same limitations cited in claim 19. Thus, claim 24 is also rejected under the same rationale as cited in the rejection of rejected claim 19.

Re claim 25, Bae et al. further disclose in Figures 2B and 3 the function of processing at least a portion of the plurality of data samples to compute a locus of the samples includes computing an approximation of the locus of the samples (equation 2 and col. 3 lines 27-32).

Re claim 28, it is a computer program product claim of claim 1. Thus, claim 28 is also rejected under the same rationale as cited in the rejection of rejected claim 1.

Re claim 34, it is a computer program product claim of claim 10. Thus, claim 34 is also rejected under the same rationale as cited in the rejection of rejected claim 10.

Re claim 36, it is a computer program product claim of claim 6. Thus, claim 36 is also rejected under the same rationale as cited in the rejection of rejected claim 6.

Re claim 49, Bae et al. further disclose the step of receiving a plurality of data samples further comprises receiving a plurality of normalized data samples (e.g. the new input data is same as the replacing/oldest data).

Re claim 50, it has same limitations cited in claim 49. Thus, claim 50 is also rejected under the same rationale as cited in the rejection of rejected claim 49.

Re claim 51, it is a device claim of claim 49. Thus, claim 51 is also rejected under the same rationale as cited in the rejection of rejected claim 49.

Re claim 52, it is a system claim of claim 49. Thus, claim 52 is also rejected under the same rationale as cited in the rejection of rejected claim 49.

Re claim 56, Bae et al. further disclose adjusting the output value of the distance-based filter and internal filter storage within a selected output range further comprises adjusting the output value and internal filter storage locations by plus or minus one circle (e.g. Figures 2B & 3 and col. 2 lines 40-59 wherein the value of final output of the circular filter must be within the unit circle in angles {0,+/-pi/2} or in magnitudes {+/-1}, and in addition the storage is circular buffer).

Re claim 57, it has same limitations as cited in claim 56. Thus, claim 57 is also rejected under the same rationale as cited in the rejection of rejected claim 56.

Re claim 58, it is a system claim of claim 56. Thus, claim 58 is also rejected under the same rationale as cited in the rejection of rejected claim 56.

Re claim 59, it has same limitations as cited in claim 56. Thus, claim 59 is also rejected under the same rationale as cited in the rejection of rejected claim 56.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4-5, 7-8, 26-27, 29-32 are rejected under 35 U.S.C. 103(a) as being obvious over Bae et al. (U.S. 5,968,111) in view of Connell et al. (U.S. 6,018,750).

Re claim 4, Bae et al. do not disclose in Figures 2B and 3 the distance-based filter further comprises one of a band-pass filter and a high-pass filter. However, Connell et al. disclose the distance-based filter further comprises one of a band-pass filter and a high-pass filter (col. 1 lines 50-54). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add one of a band-pass filter and a high-pass filter as seen in Connell et al.'s invention into Bae et al.'s invention because it would enable to reduce the roughness of input signal or allow larger input tolerate signal.

Re claims 5 and 7-8, Bae et al. do not disclose in Figures 2B and 3 computing a locus of the samples comprises computing an average of a last two or three of the

samples with the input sample. However, Connell et al. disclose in Figure 2 that the next median data is computed based on the incoming sample and the outgoing data sample (Figure 2 part 205) and also the median is computed by averaging the samples (Table 1 in col. 2). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to add a computation of a locus of the samples comprises computing an average of a last two or three of the samples with the input sample as seen in Connell et al.'s invention into Bae et al.'s invention because it would enable to reduce the roughness of input signal or allow larger input tolerate signal without producing meaningless result by statistically computing over many samples.

Re claim 26, it has same limitation cited in claim 5. Thus, claim 26 is also rejected under the same rationale as cited in the rejection of rejected claim 5.

Re claim 27, it has same limitation cited in claim 5. Thus, claim 27 is also rejected under the same rationale as cited in the rejection of rejected claim 5.

Re claim 29, it is a computer program product claim of claim 5. Thus, claim 29 is also rejected under the same rationale as cited in the rejection of rejected claim 5.

Re claim 30, it is a computer program product claim of claim 5. Thus, claim 30 is also rejected under the same rationale as cited in the rejection of rejected claim 5.

Re claim 31, it is a computer program product claim of claim 7. Thus, claim 31 is also rejected under the same rationale as cited in the rejection of rejected claim 7.

Re claim 32, it is a computer program product claim of claim 8. Thus, claim 32 is also rejected under the same rationale as cited in the rejection of rejected claim 8.

Allowable Subject Matter

7. Claims 9, 33, 35, and 53-55 are allowed.

8. Claim 60 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments filed 03/03/2006 have been fully considered but they are not persuasive.

a. The applicant argues in pages 12-13 for independent claim 1 that the cited reference by Bae does not disclose a step of normalizing the data to a range that is centered on the locus of the data samples before passing the data through a distance-based filter and additionally Bae fails to disclose a step of normalizing the output value of the distance-based filter within selected limits of normalization as recited in the claimed invention.

The examiner respectfully submits that the claim language does not define the range of centered on the locus. Thus, the reference by Bae discloses either inherently or expressively the limitations quoted above wherein the input samples are normalizing within the domain of data expressed as seen in Figure 2A and column 1 lines 34-59. The input samples are within the domain range which defined by [A,B] as maximum and minimum of the range wherein the locus of samples are the center of the domain range. Second, the claim language does not

define the predetermined output range. Thus if the output of the filter is within a range, than it clearly meets the limitation cited in the claim. In Figure 3, the output of distance filter MOUT must be within the domain range because the input samples are within the domain range and the distance filter is calculated within only domain samples. Thus, the output of the distance filter 30 is normalized within the domain range [A,B].

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2193

April 18, 2006

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SUPERVISORY PATENT EXAMINER
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